

What is claimed is:

[Claim 1] 1. An apparatus suitable for coating organic material over an organic electro-luminescent device, comprising:

an organic material storage element, having an ejection hole; and
a rolling element, disposed in the ejection hole such that an organic material stored in the organic material storage element flows out from the organic material storage element by rolling the rolling element.

[Claim 2] 2. The apparatus of claim 1, wherein the rolling element is a spherical body.

[Claim 3] 3. The apparatus of claim 1, wherein the rolling element comprises:

a roller; and
a rolling stick, disposed along the axis of the roller and rotatably disposed in the ejection hole via the rolling stick.

[Claim 4] 4. The apparatus of claim 1, further comprising an organic material supply apparatus, wherein the organic material storage element is coupled to the organic material supply apparatus.

[Claim 5] 5. The apparatus of claim 4, wherein the organic material supply apparatus is an automatic organic material supply apparatus.

[Claim 6] 6. An apparatus suitable for coating organic material over an organic electro-luminescent device, comprising:

a plurality of organic material coating elements, each of the organic material coating elements comprising:

an organic material storage element, having an ejection hole; and

a rolling element, disposed in the ejection hole such that an organic material stored in the organic material storage element flows out by rolling the rolling element; and

an organic material supply apparatus, coupled to the organic material storage elements of the organic material coating elements.

[Claim 7] 7. The apparatus of claim 6, wherein the rolling element is a spherical body.

[Claim 8] 8. The apparatus of claim 6, wherein the rolling element comprises:

a roller; and

a rolling stick, disposed along the axis of the roller and is rotatably disposed in the ejection hole via the rolling stick.

[Claim 9] 9. The apparatus of claim 6, wherein the organic material supply apparatus is an automatic organic material supply apparatus.

[Claim 10] 10. A method of coating organic material suitable for forming an organic functional layer of an organic electro-luminescent device, the method comprising:

providing a substrate having an electrode layer formed thereon; and coating an organic material over the electrode layer by an apparatus comprising:

an organic material storage element, having an ejection hole; and

a rolling element, disposed in the ejection hole such that an organic material stored in the organic material storage element flows out by rolling the rolling element.

[Claim 11] 11. The method of coating organic material according to claim 10, wherein the method of coating the organic material over the electrode layer is performed by either a contact coating method or a non-contact coating method.

[Claim 12] 12. The method of coating organic material according to claim 11, wherein the non-contact coating method is accomplished by capillarity between the apparatus and the electrode layer.

[Claim 13] 13. The method of coating organic material according to claim 10, further comprising:

providing another apparatus with a different organic material for coating the different organic material over the organic electro-luminescent device after the organic material is coated over the electrode layer.

[Claim 14] 14. A method of coating organic material suitable for forming an organic functional layer of an organic electro-luminescent device, the method comprising:

providing a substrate having an electrode layer formed thereon; and coating an organic material over the electrode layer for forming a plurality of organic material patterns by an apparatus comprising:

an organic material storage element, having an ejection hole;

a rolling element, disposed in the ejection hole such that an organic material stored in the organic material storage element flows out by rolling the rolling element; and

an organic material supply apparatus, coupled to the organic material storage elements of the organic material coating elements.

[Claim 15] 15. The method of coating organic material according to claim 14, the method of coating the organic material over the

electrode layer is performed by either a contact coating method or a non-contact coating method.

[Claim 16] 16. The method of coating organic material according to claim 15, wherein the non-contact coating method is accomplished by capillarity between the apparatus and the electrode layer.